

# Optimizing Periodic Adsorption Processes: A Newton-Picard Inexact SQP Method

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**Abstract:** Periodic Adsorption Processes like the Simulated Moving Bed process for the separation of solute chemicals can be described by partial differential equations. For purification on a production scale, time periodic operation is crucial. It is known that these periodic solutions can be efficiently calculated by the Newton-Picard method. We describe an inexact SQP method for the optimization of periodic solutions which is based on the Newton-Picard method. It facilitates simultaneous Newton-Picard iterations within the optimization. Theoretical and numerical convergence results as well as the limits of the proposed method will be presented.

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